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Port of Portland
Marine Department

MEMORANDUM

Date: July 6, 2001
To: David Ashton
Sebastian Degens
Jeff Ring
Marcel Herman's
Dorothy Sperry
Trey Harbert
Copies: Pad Quinn
From: John Childs
Re: Rehandle Facility: DEQ's Determination of Dredge Material

Attached is a letter from DEQ (dated July 2), which determines the activity of placing dredged material from T5 and T6 on the upland portion of Berth 602 is exempt from a solid waste permit, however defines the dredged material as a solid waste. Also attached is the Port's letter to DEQ (dated May 25) requesting a decision that the placement will not require solid waste permitting (because the material is similar to clean fill).

DEQ's decision to consider the dredged material a solid waste is based on the fact that the dredged material contains "contaminants." Although DEQ agreed that the dredge material placed at Berth 602 "will not adversely impact waters of the state or public health." In the definition of clean fill it is not clear if soil contains contaminants at any level then it is *not* a clean fill; or only if the contaminants are at a level which "adversely impact the waters of the state or public health."

A task force at DEQ; including Water Quality, Portland Harbor, Voluntary Cleanup, and Solid Waste; has been discussing the issue of dredged material and apparently came up with the finding.

I am planning to meet with David and Sebastian today to discuss the next steps, including city zoning.

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... 2000-2001 Ext. Corr.



Oregon

John A. Kitzhaber, M.D., Governor

Department of Environmental Quality

Northwest Region
2020 SW Fourth Avenue
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Portland, OR 97201-4987
(503) 229-5263 Voice
TTY (503) 229-5471

July 2, 2001

Mr. John L. Childs, P.E.
Marine Operations
Port of Portland
7201 N. Marine Drive
Portland, OR 97203

Re: Port of Portland's Dredge Material Rehandle Facility (Terminal 6)

Dear Mr. Childs:

Thank you for contacting the Department of Environmental Quality (DEQ), seeking a determination that the dredge material from the Port of Portland (Port) rehandle facility pilot project is exempt from the permitting requirements of Oregon Administrative Rules (OAR) 340-093-0050 that address solid waste management. We appreciate your patience to allow us to coordinate a response between DEQ's Solid Waste, Clean Up, Water Quality and Hazardous Waste Programs.

Background

On May 10, 2000, the Port met with DEQ to discuss a Dredge Material Rehandling Facility Pilot Project. The rehandle facility would allow the Port to temporarily store and de-water dredged materials prior to their final disposition. The purpose of the pilot project was to demonstrate and document the planning, analytical, and decision-making steps used by the Port to complete this project and develop options for beneficial use of dredged material.

Dredging has since been completed with the Port's existing Section 10 permit, a Clean Water Act (CWA) section 404 permit, and CWA section 401 water quality certification. The Port has used a rehandle facility at Terminal 6 to de-water the dredged materials.

On May 8, 2001, representatives from DEQ's Solid Waste and Cleanup Programs met with you to discuss your plans to move the de-watered dredge material to the upland area of Berth 602 (Terminal 6). DEQ staff discussed the process for seeking exemption from the requirement to obtain a solid waste permit and requested you submit an application for a Solid Waste Permit Exemption Determination. Your May 25, 2001 letter requests a determination from DEQ that the fill activity does not constitute disposal of solid waste. As discussed below, based on Oregon Statutes and Administrative Rules, DEQ considers the contaminated dredged sediments to be a solid waste. Therefore, we are considering the Port's letter as a request for a permit exemption as set forth in OAR 340-093-0080(2).



Discussion of the Port Proposal

The proposed activity involves moving approximately 8,000 cubic yards (cy) of de-watered dredged material (about 1,500 cy from Terminal 5 and 6,500 cy from Terminal 6) from the rehandle facility to the upland area of Berth 602 (Terminal 6). The following discussion and analysis are based on information contained in:

- 1) Port's letter dated May 25, 2001, and
- 2) "Dredged Material Characterization Study: Marine Terminal 6, Berths 603-605; Marine Terminal 5, Berth 503", prepared by Hart Crowser; November, 2000

Terminal 5 is located along the east bank of the Willamette River at river mile 1.0. Berth 503 is a dry bulk terminal that mainly handles potash. Terminal 6 is located on the Oregon Slough along the south bank of the Columbia River at river mile 102. Terminal 6, Berth 603-605 is the Port's primary container facility.

Subsurface sediment coring was completed at Terminal 6, Berths 603-605, at nine locations on September 12 through 14, 2000. One volume-weighted composite sample was created from the 46 cores total. Subsurface sediment coring was completed at Terminal 5, Berth 503, at two locations on September 15, 2000. One volume-weighted composite sample was prepared from the nine cores total.

Bulk sediment chemistry, contaminant mobility testing, and leachate testing were conducted to evaluate the potential exposure pathways, including: (a) discharge of the effluent return water over the weir into the Columbia River at the rehandle facility, (b) infiltration of dredge material leachate in the subsurface soils, under the facility berm, and out into the river bank, and (c) infiltration of leachate into the subsurface soils and the underlying aquifer.

Arsenic concentrations ranged from 2.7 to 5.2 mg/kg in the dredged material. These concentrations are above the residential PRG of 0.39 mg/kg. Despite this exceedance, these values are within typical background concentrations for arsenic soils in the area. The concentration of benzo(a)pyrene in sediment samples from Terminal 6 were 23 and 24 $\mu\text{g/kg}$ for approximately 6,500 cy of materials. 1,500 cy of material from Terminal 5 contained a concentration of 97 $\mu\text{g/kg}$. The residential PRG for benzo(a)pyrene is 62 $\mu\text{g/kg}$.

Synthetic Precipitation Leaching Procedure (SPLP) was used on samples to evaluate protection of groundwater at the fill location. Constituents in SPLP leachate are mostly below the drinking water criteria (for groundwater protection), except for arsenic and DDT. Levels for arsenic were within background levels and the DDT analysis did not show levels at which surface or groundwater could be impacted.

The grain size of the composite sample from Terminal 5, Berth 503, consists of 91 percent fines and is classified as slightly sandy, clayey silt. The composite sample from Terminal 6, Berths 603-605 consists of 70 percent fines, and is classified as slightly clayey, very sandy silt.

Comments on the Port's Proposal

Dredge Materials vs. Clean Fill: In reviewing the May 25, 2001 letter, it appears that there may be some confusion as to the regulatory definition of "clean fill", and the regulatory process for obtaining a Solid Waste Permit Exemption. As discussed at the May 8, 2001 meeting dredged materials need to be evaluated to determine whether they can be classified as "clean fill". Clean fill is defined in OAR 340-93-0030 (13), as:

"material consisting of soil, rock, concrete, brick, building block, tile or asphalt paving, which do not contain contaminants which could adversely impact the waters of the State or public health. This term does not include putrescible wastes, construction and demolition wastes and industrial solid wastes."

The Department recognizes that sediments originating from the Willamette and Columbia River may be impacted to varying degrees by a number of pollutants. The Port's testing by Hart Crowser confirmed the presence of contaminants in the dredged material. Given the contaminants and DEQ's definition of "clean fill", the Department does not consider these dredged materials to be "clean fill". Therefore, the dredged material is considered solid waste, and needs to be managed in accordance with the appropriate regulations.

The information you have provided demonstrates that the placement of the de-watered dredge material at Terminal 6 would not result in an adverse impact on groundwater, surface water, or public health and safety. This allows the Department to provide an exemption from solid waste permitting requirements for the upland management of the de-watered sediments from the pilot rehandle facility.

As you are aware, the Army Corps of Engineers is in the process of developing guidelines for evaluating material for upland disposal. DEQ's goal is to track the development of such initiatives and establish a more definitive process for dealing with upland disposal issues. Until the Department has established guidance and criteria for various dredged material management, upland disposal, and use alternatives, the Department will continue to process Solid Waste Permit Exemption applications on a case by case basis. The process the Department will use for case by case determinations is set forth in OAR 340-093-0080(2) and the Department approved application materials and guidance for applicants developed in accordance with this rule.

Approval of Port's Proposal

Based on the information submitted to the Department, the Solid Waste Program has determined that:

- The dredged sediments are solid waste as defined by Oregon Statute and Administrative Rule, and do not appear to contain hazardous wastes; however, the Port should confirm to the Department that it completed its hazardous waste determination evaluation pursuant to the protocol contained in OAR 340-102-0011.
- The requirements of OAR 340-093-0080(2) have been demonstrated to the Department's satisfaction, and a Solid Waste Permit Exemption for the upland management of the dewatered dredge material is approved.
- Placement of the 8,000 cy of de-watered dredge material as fill in the upland portion of Berth 602, Terminal 6 will not adversely impact waters of the state or public health; therefore a solid waste permit exemption can and is hereby granted
- As noted in OAR 340-093-0050(3) placement of these dredged materials, though exempted from the Department's solid waste permit requirements, may require other permits from the Oregon Division of State Lands

In the future, if the Port desires to request a Solid Waste Permit Exemption determination, please submit a complete application using the procedures and process set forth in the "Application for a Solid Waste Permit Exemption Determination" together with the required fees. This procedure and process will expedite the Department's review.

If you have any questions about the conclusions or regulatory effect of this letter, feel free to contact me at (503) 229-5151 or Monty Morshed, P.E. Solid Waste Senior Environmental Engineer at (503) 229-5585.

Sincerely,



Ed Druback
Manager, Solid Waste Program
Northwest Region

cc: Monty Morshed, Solid Waste Program, NWR



May 25, 2001

Mr. Monty Morshed, P.E.
Solid Waste Program
Department of Environmental Quality
2020 SW Fourth Ave., Suite 400
Portland, OR 97201-4987

Re: **Port of Portland's Dredge Material Rehandle Facility—Pilot Project**

Dear Mr. Morshed:

Thank you for the opportunity to meet with you, Eric Blischke, and Kim Cox to discuss the Port of Portland's (Port's) Dredge Material Rehandling Facility Pilot Project on May 8, 2001. As we had planned when we met 1 year ago (May 10, 2000) to discuss the rehandle facility, the facility now contains dredged material from our Terminal 5 and Terminal 6 facilities. As discussed most recently, we would like to move the dewatered dredged material to the upland area of Berth 602 (Terminal 6).

The purpose of this letter is to inform DEQ of the Port's intention of reusing the material from the pilot project as fill and voluntarily to request a determination that this activity is not subject to DEQ permitting under OAR section 34-093-0050. Because of a tight schedule for contract bidding and obtaining other permits, we would very much appreciate a response from DEQ by June 8, 2001.

Placement of Dredged Material

The dewatered dredged material is scheduled for removal in September 2001. We are proposing to transport it to the western area of Terminal 6 and place it in the upland portion of Berth 602. The entire volume of material dredged from Terminal 5 and Terminal 6 during our 2000/2001 dredging operation will be placed at this location of Berth 602.

Nature of the Fill Activity

The reuse of the dewatered dredged material from the Willamette and Columbia Rivers does not trigger any obligation to obtain a permit from DEQ under OAR section 340-093-0050. Subsection 340-093-0050(1) states that "[e]xcept as provided by section (3) of this

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rule, no person shall establish, operate, maintain or substantially alter, expand, improve or close a disposal site . . . until the person owning or controlling the disposal site obtains a permit therefor from the Department." Specifically excluded from OAR's section 340-093-0030(30) definition of a regulated "disposal facility" is "a site that is used by the owner or a person in control of the premises to dispose of soil, rock, concrete or other similar non-decomposable material. . . ." The dewatered dredged material, derived from sediments in the rivers that had been transported and passively deposited in the Port's berthing areas by natural processes, are non-decomposable material similar to soil. The Port performed an environmental evaluation of the dredged material and determined that the material is protective of human health and the environment, consistent with the substantive requirements of DEQ's solid waste and remedial action cleanup regulations, as discussed below.

Nonhazardous Determination

The evaluation of toxicity characteristics is presented in Table 1. The Toxicity Characteristic Leaching Procedure (TCLP), EPA Method 1311, requires a 20-to-1 dilution by weight of soil with laboratory leachant. The resultant leachate is then compared to the toxicity characteristic criteria listed in 40 CFR 261.24. Because of the TCLP method requirements, soil samples with concentrations less than 20 times the toxicity characteristic criteria cannot leach at concentrations that would be designated as a hazardous waste. As shown on Table 1, the bulk sediment concentrations in the dredged material are well below the twenty times toxicity characteristic criteria.

The dredged material from Terminals 5 and Terminal 6 does not exhibit toxicity or any other characteristic in 40 CFR 261.24 and is therefore not a hazardous waste.

Environmental Evaluation

An evaluation was performed to determine if the dewatered dredged material is similar to soil or, to the contrary, poses a threat to human health or the environment. In particular, Synthetic Precipitation Leaching Procedure (SPLP) was used on representative samples of the dredged material to evaluate protection of groundwater at the proposed placement location. Evaluation of human health risk from direct contact with the dredged material, according to the requirements of DEQ's remedial action regulations, was also conducted.

Protection of Groundwater. The SPLP results from the dredged material are compared to the reference leachate concentrations of the Solid Waste Program in Table 2. In all cases, the SPLP leachate concentrations are lower than the reference leachate concentrations, or undetected at an appropriate quantitation limit. Therefore, the dredged material is protective of groundwater.

Protection of Direct Contact Risk. The bulk sediment concentrations of the dredged material were compared to EPA Region 9 Preliminary Remediation Goals (PRGs) for direct contact risk to humans in Table 3. PRGs for direct contact risk have been developed for both residential and industrial scenarios. PRGs are recognized under DEQ's remedial action regulations as appropriate risk-based screening concentrations. All constituents in the material are below the residential PRGs, with two exceptions—arsenic and benzo(a)pyrene. These constituents are discussed below.

Arsenic concentrations ranged from 2.7 to 5.2 mg/kg in the dredged material. These concentrations are above the residential PRG of 0.39 mg/kg. However, natural background arsenic concentrations in the vicinity of the Cascade volcanic province routinely exceed this PRG. In a regional study of natural background soil concentrations, the Washington State Department of Ecology determined that the background arsenic concentration in Clark County was 6 mg/kg (Ecology, 1994). In addition, background arsenic concentrations of levels up to 10 to 12 mg/kg have been documented in site-specific studies within the Portland metropolitan area. Therefore, the arsenic concentrations in the dredged material are typical of natural background concentrations for the Lower Columbia River area.

The concentrations of benzo(a)pyrene at Terminal 6 were 23 and 24 µg/kg, well below the residential PRG of 62 µg/kg. However, dredged material from Terminal 5 contained a benzo(a)pyrene concentration of 97 µg/kg, somewhat higher than the residential PRG. The material now located at the Suttle Road rehandling facility contains a mixture of material from Terminal 5 and Terminal 6; but less than 25 percent by volume was derived from Terminal 5 (approximately 1,500 cy of material came from Terminal 5 while 6,500 cy came from Terminal 6). In addition, biodegradation of organic chemicals such as benzo(a)pyrene should be stimulated in an aerobic upland environment, further reducing concentrations. As a result, the average benzo(a)pyrene concentrations in the rehandling facility will be below the residential PRG. Also, the concentrations of benzo(a)pyrene was below the residential levels listed in Table 1 of OAR 340-122-045 of 100 mg/kg for both Terminal 5 and Terminal 6. Therefore, the dewatered material does not pose a significant risk to human health or the environment.

Conclusion

Based on the above information, the Port is voluntarily seeking a determination that its fill activity is not regulated under OAR 340-093 as the creation of a disposal site and can proceed as planned.

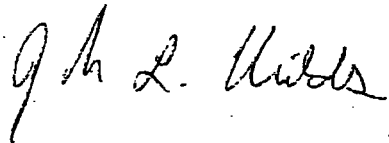
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The Port appreciated the opportunity to work with DEQ from the development and dredging phases, and now the final disposition phase of this pilot project. If there are any questions or comments, please do not hesitate to call me at 503/240-2011.

Sincerely,

A handwritten signature in cursive script, appearing to read "John L. Childs".

John L. Childs, P.E.
Marine Environmental

cc:

Eric Blischke, DEQ, Waste Management and Cleanup

Kim Cox, DEQ, Waste Management and Cleanup

Tom Melville, DEQ, Water Quality

John Malek, EPA, Sediment Management Program

Mark Siipola, Army Corps of Engineers

Sebastian Degens, Port of Portland Marine Planning & Development

Todd Thornburg/Hart Crowser